

19001388



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Reg. No.....

Name.....

**M.Sc. DEGREE (C.S.S.) EXAMINATION, APRIL 2019**

**Fourth Semester**

Faculty of Science

Branch VI—Botany

Programme Elective : Microbiology

**PE 3—INDUSTRIAL MICROBIOLOGY**

(2012 Admission onwards)

Time : Three Hours

Maximum Weight : 30

I. Answer any *six* of the following in not less than 50 words (weight 1 each) :

- 1 Bio-reactors.
- 2 Solid State Fermentation.
- 3 PHB.
- 4 Name to industrially important amino acids.
- 5 SCP.
- 6 Sterilization.
- 7 Liquid Shear.
- 8 Solvent Precipitation.

(6 × 1 = 6)

II. Answer any *seven* of the following in not less than 100 words (weight 2 each) :

- 9 What is scale up fermentation.
- 10 Explain downstream processing.
- 11 Explain the steps involved in Beer production.
- 12 What are bioreactors ?
- 13 Inoculum preparation and inoculation.
- 14 Methods for the storage of micro-organism in dehydrated forms.

**Turn over**





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- 15 How micro-organisms are preserved ?
- 16 Explain submerged fermentation.
- 17 Explain the importance of nitrogen sources in microbial fermentation.
- 18 Mention the steps involved in the production of acetic acid.

(7 × 2 = 14)

III. Answer any *two* of the following in not less than 250 words (weight 5 each) :

- 19 Describe the application of immobilized cells and enzymes.
- 20 Briefly explain the production of organic acids.
- 21 Briefly explain the process of production of amino acids.

(2 × 5 = 10)

